

## ABSTRACT

- ❖ **Title of dissertation:** Analysis and comparasion of squat exercise due to surface EMG
- ❖ **Objectives of dissertation:** To measure and describe the structure involving specific muscles durring back squat, front squat and smith machine squat exercise.
- ❖ **Method:** Surface EMG analysis and simple kinematic analysis.
- ❖ **Results:** Activation of m. gluteus maximus was highest after the start of excentric movement. Main muscle working on the chase between the concentric and excentric movement was m. rectus femoris. Very similar timing and synergy were between m. erector spinae and m. biceps femoris. In this study was not higher activation of m. quadriceps femoris during front squat exercise, activation of m. gluteus maximus were also higher.
- ❖ **Key words:** squat, strengthening, bar, front squat, back squat, Smith machine squat, bodybuilding, weightlifting, powerlifting, EMG analysis, kinematic analysis